Worldwide Markets

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A Global Perspective

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Large Enterprises Require Worldwide Information Systems

- Worldwide markets developing
- Responsiveness to customers
- Timely transfer of information
  - Tactical, competitive
  - Strategic

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Globalized Information Systems Enterprise-wide Applications

- Material
  - Inventory control, JIT
  - Order entry (EDI)
  - MRP II, closed-loop systems

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Globalized Information Systems Enterprise-wide Applications

- Financial
  - EFT, cash management
  - Financial consolidations
  - 24-hour financial markets
  - Pricing, cost analyses

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Globalized Information Systems Facilitators

- Telecommunications networks
- Support services
- Standards
- Worldwide vendor capabilities

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Globalized Information Systems Facilitators

- Emerging communications standards
  - X.400, X.500, EDIFACT
  - OSI, ONA
- Industry-specific data bases
- Simultaneous language translation

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Globalized Information Systems Facilitators

- Network capabilities
  - Graphics transmission
  - Facsimile (broadcast, store and forward)
  - EDI

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Globalization Benefits from Emerging Standards

- Consortia-driven and de-facto:
- UNIX—gaining acceptance rapidly
- CASE (eventually)

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Globalization Benefits from Emerging Standards

- RDBMS
  - Oracle, DB2, others
- SAA
- Graphical user interfaces
- Communications protocols

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Counter-Trends to Globalization

- Time required to build relationships
- Longer lead time to profits
- Language barriers
  - Documentation

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Countertrends to Globalization

- Cultural "non-fits"
- Preference for local products and services
- Focus on narrow, niche markets
- National restrictions

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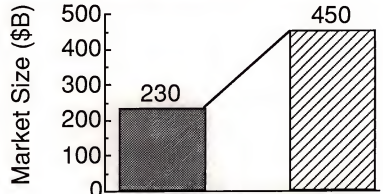
Worldwide Information Services Market, 1991-1996



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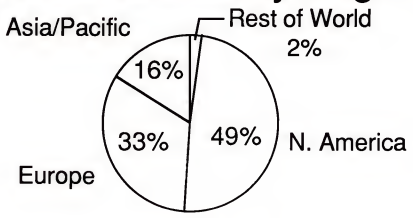
1991 Worldwide Information Services Market by Region



1991 = $234 billion

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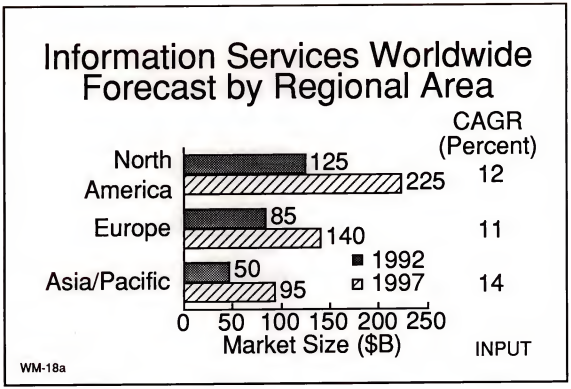

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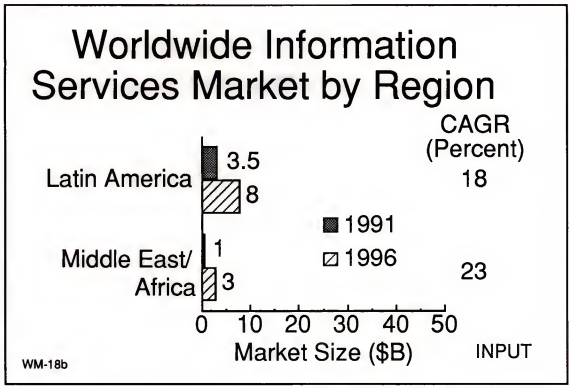

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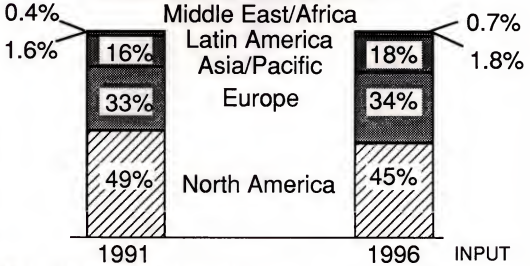
Worldwide Market Summary
Market Distribution



WM-19 Figures may not add to 100 due to rounding

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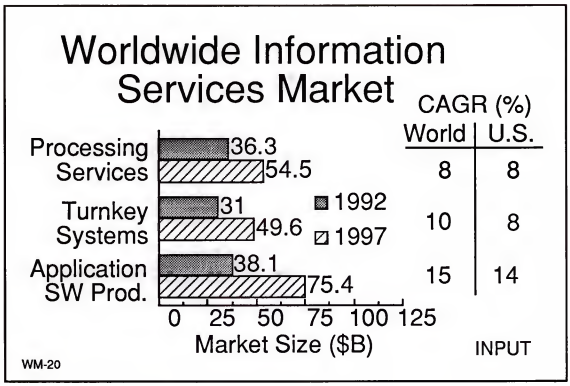

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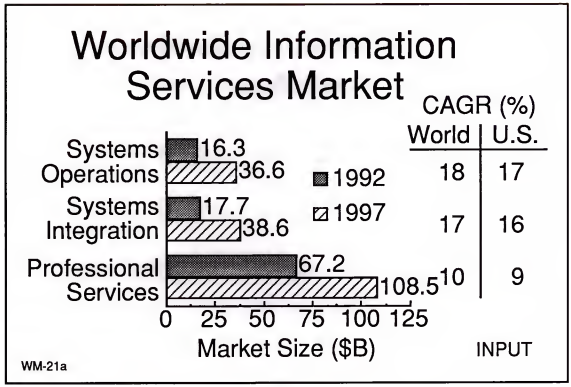

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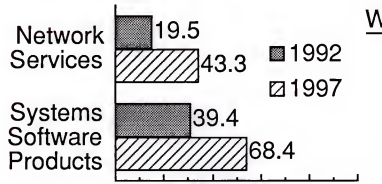
Worldwide Information Services Market



CAGR (%)	World	U.S.
Network Services	17	17
Systems Software Products	12	14

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Worldwide Information Services Market by Country

Country	1991 Market	
	$ Billions	Percent
United States	111	47
Japan	32	14
France	18	8

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Worldwide Information Services Market by Country

Country	1991 Market	
	$ Billions	Percent
Germany	14	6
United Kingdom	14	6
Rest of World	45	19
Total	234	100

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Building a Global Capability

- Andersen Consulting
- CAP Gemini Sogeti
- Infonet
- Digital
- CSC

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Acquiring a Global Capability

- CSC
- EDS
- CAP Gemini Sogeti
- DEC

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Canadian Market Business Environment

- Recession
- Impact of free trade
- Low productivity

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Canadian Market Business Environment

- Federal budget and taxes
- Need for improved business systems and telecommunications
- Limitations on funding automation

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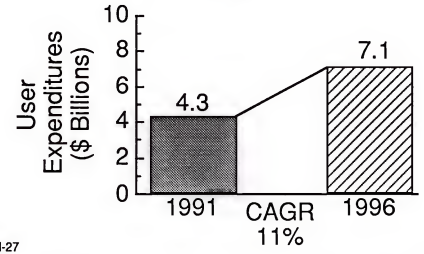
Canadian Information Services Market, 1991-1996



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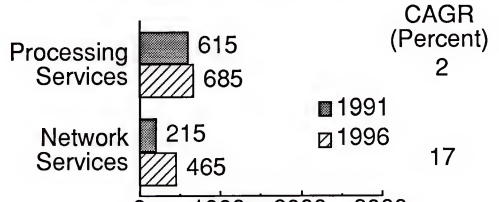
Canadian Information Services Market,1991-1996



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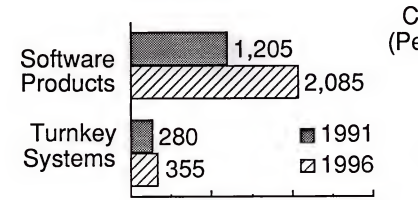
Canadian Information Services Market, 1991-1996



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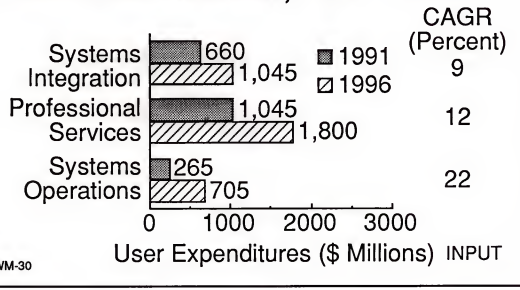
Canadian Information Services Market,1991-1996



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Canadian Market
Key Technology Needs

- Integration is key
- Growing DBMS use
- Local/wide-area networking

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Canada

Key Technology Trends

- Relational data base technology
- Network expansion
- Client/server introduction
- Expanded use of EDI
- Integration of applications

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Canadian Market
Key Technology Trends

- Productivity tools growth
- Continued downsizing
- More technology integration

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Canadian Market
Key Technology Issues

- Benefits not visable
- Loss of control due to rapid penetration
- Business/technology linkage needed

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Canada

Ranking of Technology Importance

Factor	Average User Rank	Average Vendor Rank
Network	5	3
EDI	6	5
Electronic mail	7	-
Open systems	8	2

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Canada

Forces Driving Information Services Expenditures

Factor	User Rank	Vendor Rank
Distribution	-	5
Quality	-	6
Outsourcing	-	7

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Canada

Forces Inhibiting Outside Services Expenditures

Factor	Average Rank	
	User	Vendor
Government regulation	4	-
Impact on user organization	5	-
Downsizing	-	4

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Canada

Forces Inhibiting Outside Services Expenditures

Factor	Average Rank	
	User	Vendor
User doesn't have enough knowledge to utilize vendor	-	3
Loss of control by user	-	5

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Canada

Conclusions

- Recession and trade agreement continues to have a negative effect
- Users are highly cost conscious
- Financing diff. limit project activities
- Present application systems and networks limit business

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Globalized Information Systems

- Electronic Commerce
  - EDI based
  - Trading community based
  - Changing how business is done

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Worldwide Market

Processing Services

	'91 ($B)	'96 ($B)	CAGR (%)
North America	18.9	27.4	8
Europe	9.4	13.3	7
Asia/Pacific	6.3	10.2	10
Latin America	0.3	0.5	8
Mid East/Africa	0.3	0.6	14

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Worldwide Market

Turnkey Systems

	'91 ($B)	'96 ($B)	CAGR (%)
North America	11.7	17.8	9
Europe	12.3	24.3	15
Asia/Pacific	4.4	8.1	13
Latin America	0.5	1.0	16
Mid East/Africa	0.1	0.2	12

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Worldwide Market

Applications SW Products

	'91 ($B)	'96 ($B)	CAGR (%)
North America	20.5	39.3	14
Europe	9.1	20.9	18
Asia/Pacific	2.9	7.0	19
Latin America	1.0	2.8	22
Mid East/Africa	0.3	1.1	30

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Worldwide Market

Systems Operations

	'91 ($B)	'96 ($B)	CAGR (%)
North America	8.5	18.3	16
Europe	1.5	3.8	21
Asia/Pacific	3.2	7.9	20
Latin America	0.2	0.4	12
Mid East/Africa	-	-	-

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Worldwide Market

Systems Integration

	'91 ($B)	'96 ($B)	CAGR (%)
North America	8.2	18.6	18
Europe	3.4	8.1	19
Asia/Pacific	3.2	8.5	21
Latin America	0.1	0.2	13
Mid East/Africa	-	-	11

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Worldwide Market

Professional Services

	'91 ($B)	'96 ($B)	CAGR (%)
North America	18.7	29.8	10
Europe	24.7	51.9	16
Asia/Pacific	12.7	31.0	20
Latin America	0.6	1.5	19
Mid East/Africa	0.3	1.1	30

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Worldwide Market

Network Services

	'91 ($B)	'96 ($B)	CAGR (%)
North America	9.5	20.5	17
Europe	4.7	11.6	20
Asia/Pacific	1.6	4.4	22
Latin America	0.1	0.3	14
Mid East/Africa	-	-	-

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Worldwide Market

Systems SW Products

	'91 ($B)	'96 ($B)	CAGR (%)
North America	18.5	32.4	12
Europe	12.6	21.6	11
Asia/Pacific	2.7	6.3	18
Latin America	0.7	1.7	20
Mid East/Africa	-	0.1	10

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Leading Vendors

Worldwide Information Services

Rank	Vendor/ Country	1990 Rev. ($B)	Market Share (%)
1	IBM (U.S.)	13.5	6.4
2	EDS (U.S.)	2.9	1.4
3	DEC (U.S.)	2.8	1.3
4	NTT (Japan)	2.5	1.2

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Leading Vendors

Worldwide Information Services

Rank	Vendor/ Country	1990 Rev. ($B)	Market Share (%)
5	Reuters (U.K.)	2.5	1.2
6	Andersen (U.S.)	2.2	1.0
7	Siemens-Nixdorf (Germany)	1.8	0.9

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Leading Vendors

Worldwide Information Services

Rank	Vendor/ Country	1990 Rev. ($B)	Market Share (%)
8	CSC (U.S.)	1.7	0.8
8	CAP Gemini Sogeti (France)	1.7	0.8
9	Microsoft (U.S.)	1.4	0.7

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Leading Vendors

Worldwide Information Services

Rank	Vendor/ Country	1990 Rev. ($B)	Market Share (%)
10	Computer Assoc. (U.S.)	1.3	0.6
11	Oracle	1.1	0.5
12	Bull (France)	0.9	0.4

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WM-50a

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Leading Vendors

Worldwide Information Services

Rank	Vendor/ Country	1990 Rev. ($B)	Market Share (%)
12	TRW (U.S.)	0.9	0.4
12	First Fin'l. Mgmt. (U.S.)	0.9	0.4
13	AMEX (U.S.)	0.8	0.3

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WM-50b

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Leading Vendors

Worldwide Information Services

Rank	Vendor/ Country	1990 Rev. ($B)	Market Share (%)
14	Nomura Res. (Japan)	0.7	0.3
14	CSK (Japan)	0.7	0.3
15	Sema	0.6	0.3

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WM-50c

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Leading Vendors

Worldwide Information Services

Rank	Vendor/ Country	1990 Rev. ($B)	Market Share (%)
15	Japan Res. Inst. (Japan)	0.6	0.3
15	Hitachi Info. Sys. (Japan)	0.6	0.3

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Europe

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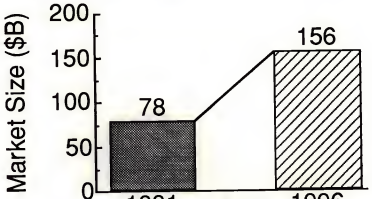
European Information Services Market



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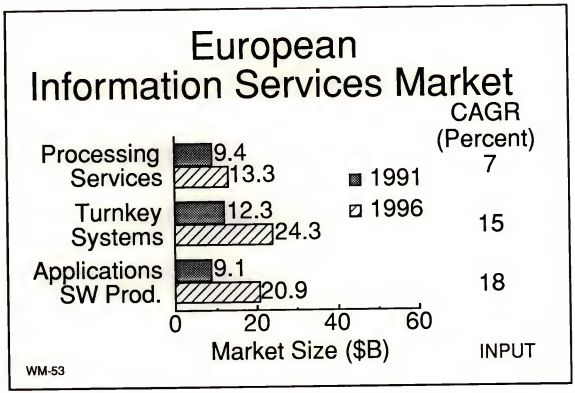

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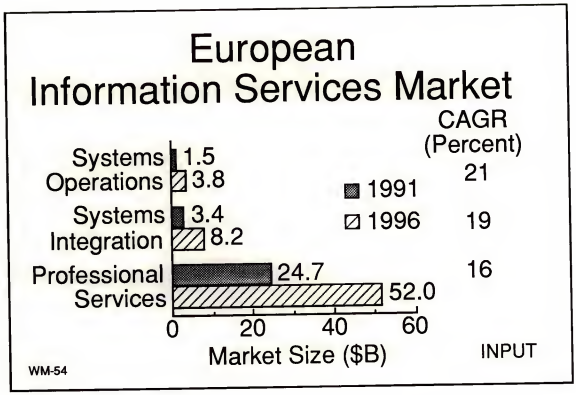

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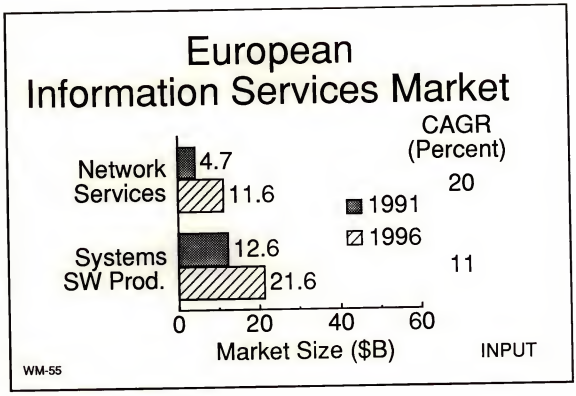

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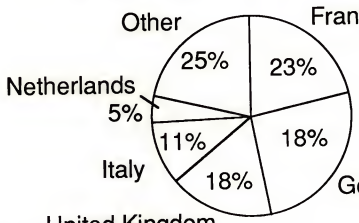
European Info. Svcs. Market Distribution, 1991



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Information Services Markets by Country

Country	Market ($B) 1991	1996	CAGR (%)
France	18.1	36.1	15
Germany	14.4	30.3	16
United Kingdom	14.2	26.4	13
Italy	8.4	16.5	15

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Information Services Markets by Country

Country	Market ($B) 1991	1996	CAGR (%)
Netherlands	4.6	9.2	15
Sweden	3.4	6.6	15
Spain	2.7	6.3	18
Switzerland	2.7	5.6	15

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Information Services Markets by Country

Country	Market ($B) 1991	1996	CAGR (%)
Belgium	2.2	4.7	18
Denmark	1.8	3.2	12
Norway	1.6	3.0	13

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Information Services Markets by Country

Country	Market ($B) 1991	1996	CAGR (%)
Finland	1.3	2.6	14
Austria	1.2	2.3	14
Other Europe	3.7	6.3	14

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European Information Services Markets by Industry

	Market ($B)		
	1991	1996	CAGR (%)
Distribution	4.1	7.1	12
Banking & Finance	15.3	31.0	15

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European Information Services Markets by Industry

	Market ($B)		
	1991	1996	CAGR (%)
Insurance	3.8	8.4	17
Discrete Mfg.	10.5	22.0	16
Process Mfg.	4.4	10.2	18

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Europe

Driving Forces

- Creation of single market
- Vendor consolidation for single market
- Privatization drives new investment

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Europe

Driving Forces

- Increasing acceptance of packaged software
  - Penetration less than U.S.
- Acceptance of standards
  - UNIX, etc. faster than U.S.

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Europe

Inhibiting Factors

- Continuing economic downturn
- Languages and cultures

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Single European Market
Many Trade Barriers

- Languages, cultures, currencies
- EEC + EFTA
- Eastern countries

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Single European Market One Strategy or Many

- Pan European vendors?
- Developed vs. undeveloped areas
- Strong open systems trend

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Europe

Areas of Opportunity

- UNIX
  - Software products
  - Professional services
- Systems operations
- Network operations
- Desktop services

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Europe

Areas of Opportunity

- Applications software products
- Professional services
  - Software maintenance
  - New technology training
  - New technology services

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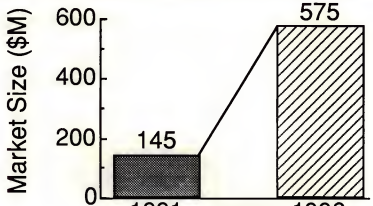
Eastern European Information Services Market



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Eastern European Information Services Market

	Market ($M)		
	1992	1997	CAGR (%)
Processing Services	14	27	14
Turnkey Systems	18	59	27
Applications SW Prod.	69	146	16

INPUT

WM-72a

Notes

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Eastern European Information Services Market

	Market ($M)		
	1992	1997	CAGR (%)
Systems Operations	8	50	44
Systems Integration	10	151	73

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WM-72b

Notes

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Eastern European Information Services Market

	Market ($M)		
	1992	1997	CAGR (%)
Professional Services	27	63	18
Systems SW Prod.	35	128	30
Network Services	2	17	53

INPUT

WM-73

Notes

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Eastern Europe

Driving Forces

- Major change in political environment
- Increased free world aid
- Industrial modernization
- Privatization

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Notes

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Eastern Europe

Inhibitors

- Economic status
- Lack of local skills
- Small computer installed base
- Currency weakness
- Languages

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Notes

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Eastern Europe

Market Entry Considerations

- Small markets—many markets
- Small computer installed base
- PC products favored
- Support service complications
- Long-term commitment

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WM-76

Notes

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Eastern Europe

Areas of Opportunity

- Education & training
- Local agent business development
- Turnkey systems
- National and local government
- Professional services—all kinds

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WM-77

Notes

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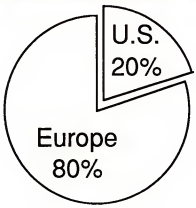
Vendors in the Western European Market, 1991

Software and Services Market—$77B



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WM-78

Notes

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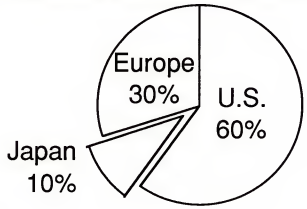
Vendors in the Western European Market, 1991

Computer Equipment Market—$60B



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Notes

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Leading Vendors in Europe

Rank	Vendor	Country	Info. Svcs. Rev. '90 ($M)
1	IBM	U.S.	4,900
2	Siemens-Nixdorf	Germany	1,690
3	CAP Gemini Sogeti	France	1,650
4	Reuters	U.K.	1,430

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WM-80

Notes

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Leading Vendors in Europe

Rank	Vendor	Country	Info. Svcs. Rev. '90 ($M)
5	Digital	U.S.	1,220
6	Bull	France	795
7	Andersen Consulting	U.S.	705

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WM-81

Notes

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Leading Vendors in Europe

Rank	Vendor	Country	Info. Svcs. Rev. '90 ($M)
8	Unisys	U.S.	720
9	Microsoft	U.S.	655
10	Sema Group	France	640

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WM-82

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Latin America

WM-84

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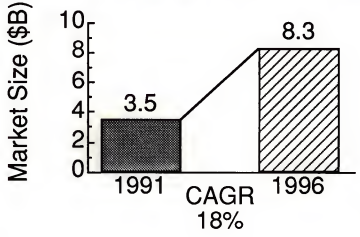
Latin American Information Services Market



WM-85

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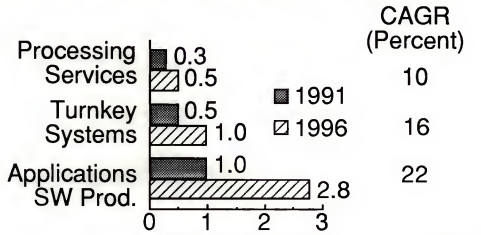
Latin American Information Services Market



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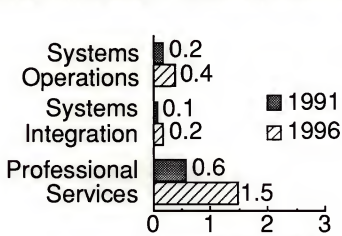
Latin American Information Services Market



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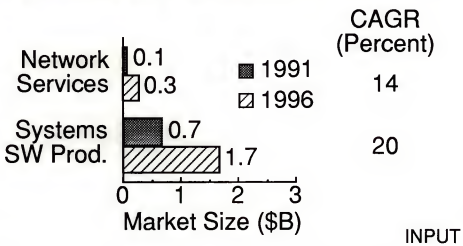
Latin American Information Services Market



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WM-88

Notes

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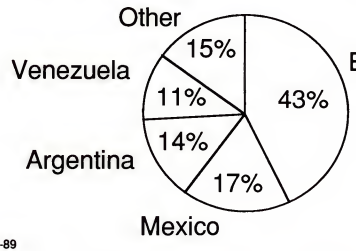
Latin American Info. Svcs. Market Distribution, 1991



WM-89

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Latin America

Driving Forces

- Public sector spending
  - Education
- Improving labor skills
- Mini/PC growth
- Privatization
- Political stability improving

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Latin America

Inhibiting Factors

- Inflation
- Protectionism
- Stalled economies
- Inflation
- Software licensing rules

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Latin America

Market Entry Considerations

- Vendor stability—foreign and local
- Long-term view essential
- Local representation required
- Product ownership issues
- Improving software licensing laws

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WM-92

Notes

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Latin America

Areas of Opportunity

- Office Productivity
- Turnkey systems—mini & PC
- Education & training
- Professional services—tied to software products
- New technology—transfer of skills

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WM-93

Notes

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Latin American Info. Svcs. Markets by Country

Country	'91 ($B)	'96 ($B)	CAGR (%)
Brazil	1.5	3.7	20
Mexico	0.6	1.4	19
Argentina	0.5	1.1	17
Venezuela	0.4	0.7	13
Other	0.5	1.4	20

INPUT

WM-94

Notes

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Latin America

Applications Software Products Market Forecast

	Market ($B)		
	1990	1995	CAGR (%)
Brazil	0.3	1.0	24
Mexico	0.1	0.4	27
Argentina	0.1	0.3	24

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WM-95

Notes

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Latin America

Applications Software Products Market Forecast

	Market ($B)		
	1990	1995	CAGR (%)
Venezuela	0.1	0.2	20
Other	0.2	0.6	25

INPUT

WM-96

Notes

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Information Services Market Penetration Worldwide

	Market ($B)	
	1991	1996
Information Systems	900	1,300
Information Services	230	450
Penetration	26%	35%

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WM-97

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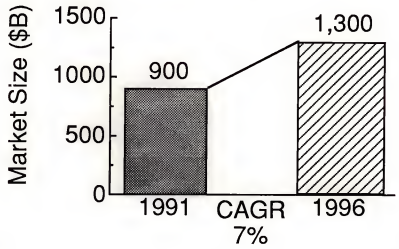
Worldwide IT Expenditures



WM-98a

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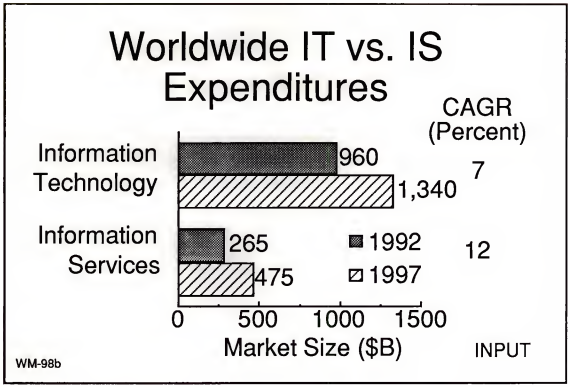

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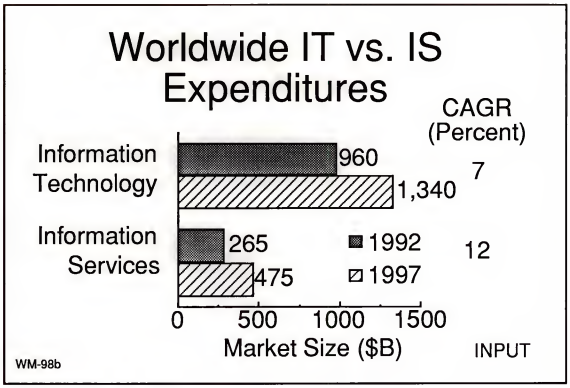

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Worldwide Information Services Industry

Driving Forces

- Worldwide recessionary economy
- Information Society
- Shifting information technology foundation
- Expanding role of general management

INPUT

WM-99a

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Worldwide Information Services Industry

Driving Forces

- Integrated solutions
- Industry-specific solutions
- International standards
- Information services vendor capabilities

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WM-99b

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Worldwide Information Services Industry

Market Considerations

- Total potential 3 to 4 times current size
- Worldwide vendor capabilities becoming critical

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Worldwide Information Services Industry

Market Considerations

- Larger vendors increasing market share
- Outsourcing favoring larger vendors
- Revolutions will cause the unexpected

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Asia/Pacific

INPUT

WM-102

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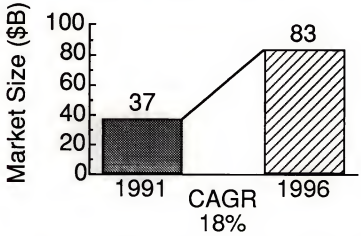
Asian/Pacific Information Services Market



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WM-103

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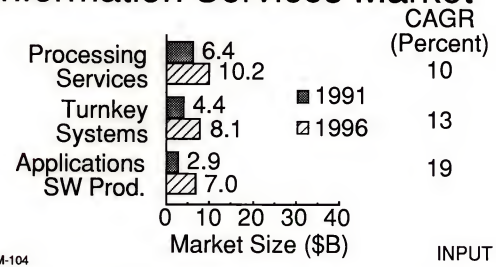
Asian/Pacific Information Services Market



WM-104

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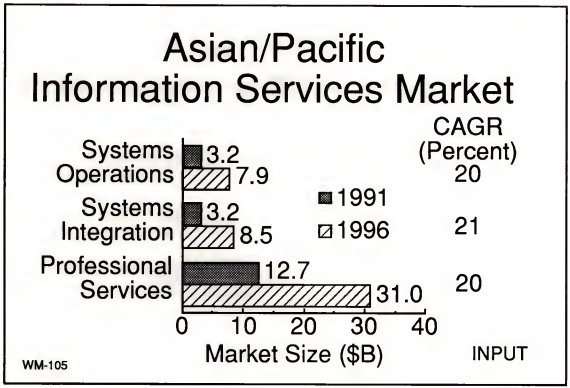

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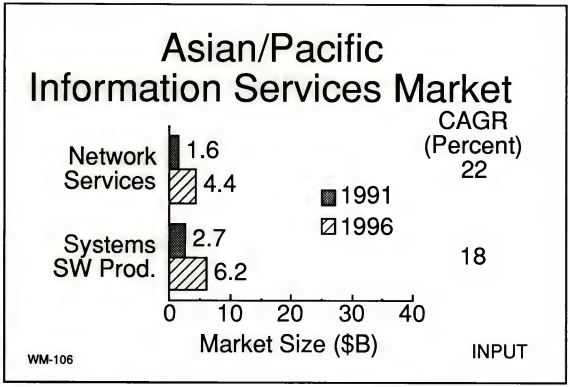

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Asia/Pacific

Market Considerations

- Many small markets
- One large market—Japan
- Local representation mandatory
- Language issue for software
- Copyright exposures
- Australia/New Zealand more open

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WM-107

Notes

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Japan

INPUT

WM-108

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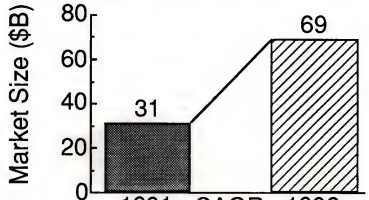
Japanese Information Services Market



WM-109

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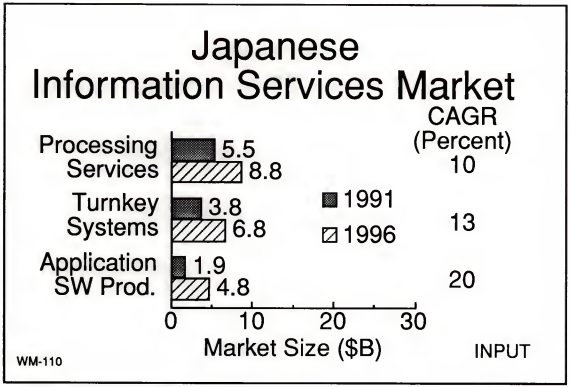

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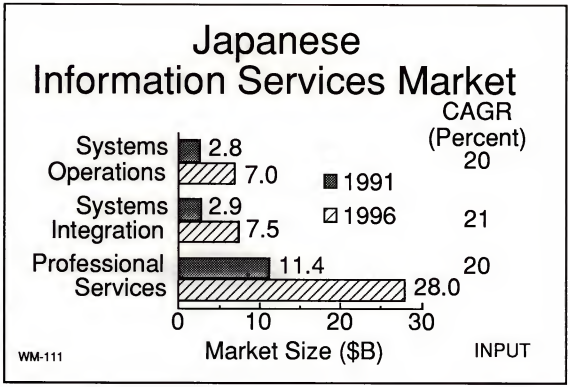

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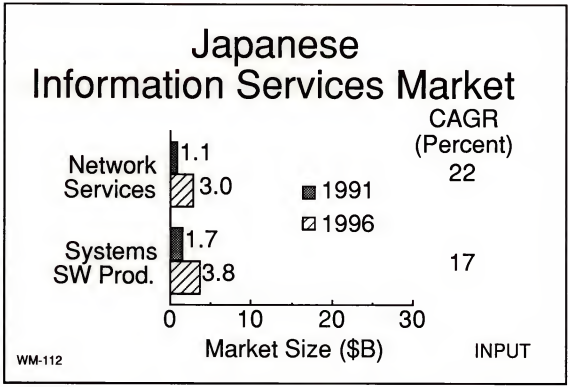

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Japan

Leading Information Services Vendors, 1991

Vendor	Revenue ($B)	Market Share (%)
NTT Data	2.9	8
Nomura Res. Inst.	1.0	2
Hitachi Info. Sys.	0.8	2

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INPUT

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Japan

Leading Information Services Vendors, 1991

Vendor	Revenue ($B)	Market Share (%)
CSK	0.7	2
Hitachi SW Engr.	0.7	2
Japan Res. Inst.	0.6	2

WM-113b

INPUT

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Japan

Leading Information Services Vendors, 1991

Vendor	Revenue ($B)	Market Share (%)
Quick	0.55	2
Toyo Info. Sys.	0.5	1
INTEC	0.5	1

WM-113c

INPUT

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Japan

Driving Forces

- Global market objectives
- Increasing competition
- Increased interest in outsourcing
- Government policies
- New competitors

INPUT

WM-114

Notes

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Japan

Inhibiting Factors

- Very large systems projects
- Software development capabilities
- Trade friction
- Language
- Protectionism

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Japan

Market Considerations

- Long-term investment required
- Japan-specific products needed
- Value-added products essential
- Unique personal computers
- Use distributor approach

INPUT

WM-116

Notes

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Canada

Leading Information Services Vendors, 1991

Vendor	Market Share (%)
IBM	>10
ISM	>6
DEC	>4
SHL	>3

INPUT

WM-117

Notes

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Canada

Leading Information Services Vendors, 1991

Vendor	Market Share (%)
Andersen	<2
CGI	<2
DMR	<2

INPUT

WM-118

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Canada

Leading Information Services Vendors, 1991

Vendor	Market Share (%)
EDS	<2
IST	<2
LGS	<2

INPUT

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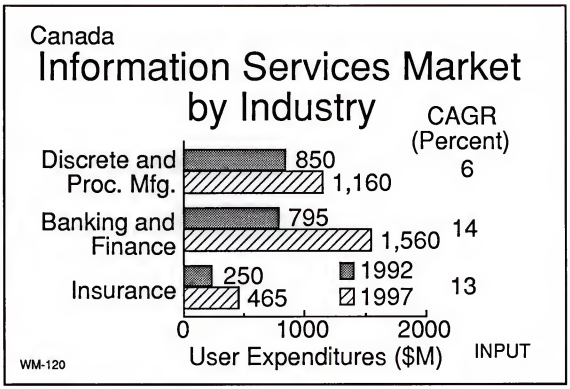

Notes

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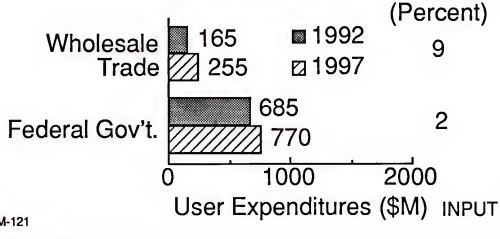
Canada

Information Services Market by Industry



WM-121

Notes

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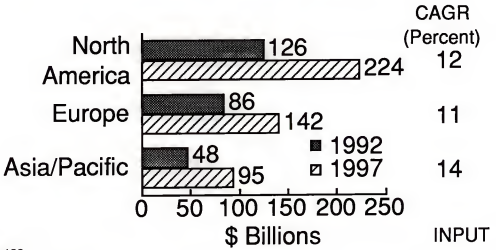
Information Services Worldwide Forecast by Regional Area



WM-122a

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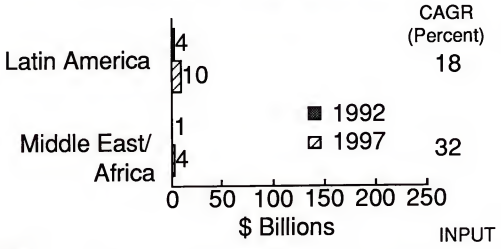
Information Services Worldwide Forecast by Regional Area



WM-122b

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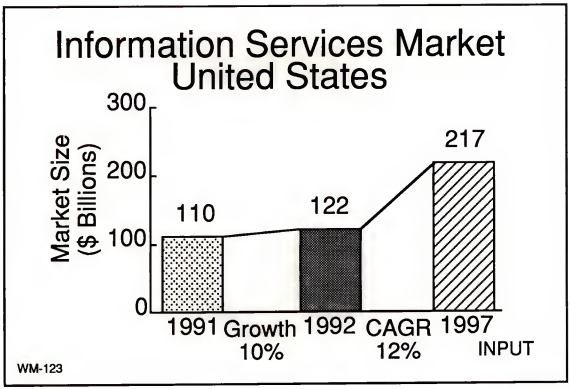

Notes

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Worldwide Expenditures 1992-1997

Category	1992 ($B)	1997 ($B)	CAGR (%)
People	345	420	4
Hardware	180	200	2
Data Commun.	30	65	15
SW Products & Turnkey Sys.	110	195	12

INPUT

WM-124a

Notes

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Worldwide Expenditures 1992-1997

Category	1992 ($B)	1997 ($B)	CAGR (%)
Other Info. Svcs.	155	280	12
Equipment Svcs.	40	55	7
Facilities and Overhead	100	125	5
Total (Rounded)	965	1,340	7

INPUT

WM-124b

Notes

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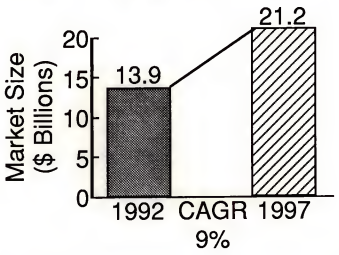
Information Services Market
United Kingdom, 1992-1997



INPUT

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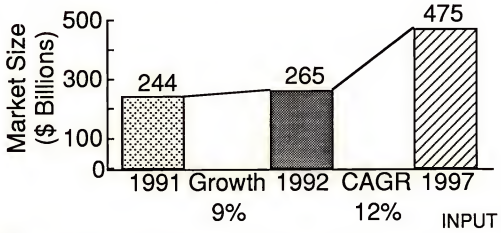
Worldwide Market Forecast, 1992-1997



WM-127

Notes

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Worldwide Information Technology Expenditures, 1992-1997

Category	1992 ($B)	1997 ($B)	92-97 CAGR (%)
People	346	421	4
Hardware	180	198	2
Data Comm.	32	65	15
SW Products and Turnkey Systems	108	193	12

INPUT

WM-128a

Notes

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Worldwide Information Technology Expenditures, 1992-1997

Category	1992 ($B)	1997 ($B)	92-97 CAGR (%)
Other Info. Svcs.	157	281	12
Equipment Svcs.	41	57	7
Facilities and Overhead	99	126	5
Total	963	1,342	7

INPUT

WM-128c

Notes

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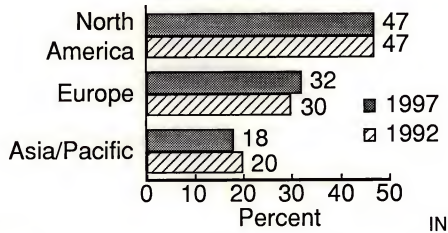
Worldwide Market Distribution 1992-1997



INPUT

WM-130a

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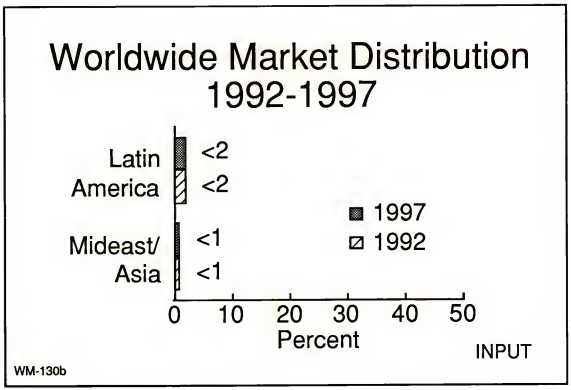

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Worldwide Market Forecast—Leading Countries

Country	1992 $ Billions	1992 Total (%)	1997 $ Billions	1997 Total (%)
U.S.	122	46	218	46
Japan	41	16	78	16
France	20	8	34	7
Germany	17	6	32	7

INPUT

WM-131a

Notes

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Worldwide Market Forecast—Leading Countries

Country	1992 $ Billions	1992 Total (%)	1997 $ Billions	1997 Total (%)
U.K.	14	5	22	5
Other Countries	51	19	91	19
Total	265	100	475	100

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